

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-19 (cancelled)

20 (currently amended). A process for fabricating an electrically modulated programmable mask for optical lithography comprising at least one optical modulator operable at one of the lithographic wavelengths of 248nm, 193nm or 157nm, said process comprising:

providing a substrate having electrical control circuitry thereon; and

applying at least one type of semiconductor nano-particles with a bandgap to at least a portion of said substrate, ~~said nano-particles providing optical modulation at one of 248nm, 193nm or 157nm~~ said bandgap corresponding to the energy of said wavelength;

providing, using said electrical control circuitry, voltage or current to said at least one modulator individually, said voltage or current inducing said nano-particles to change transparency at said wavelength, said nano-particles thereby providing optical modulation at said wavelength; and

illuminating said programmable mask with a light of said wavelength to provide a spatial light pattern.

21-26. (cancelled)

27. (previously presented) The process of claim 20 wherein said substrate comprises a silicon-on-sapphire wafer in which sapphire is transparent to 248nm, 193nm and 157nm light.

28-39. (cancelled)

40 (currently amended). A process for fabricating an electrically modulated programmable mask for optical lithography comprising at least one optical modulator operable at the lithographic wavelength of 365nm, said process comprising:

providing a substrate having electrical control circuitry thereon; and

applying at least one type of semiconductor nano-particles with a bandgap to at least a portion of said substrate, ~~said nano-particles providing optical modulation at 365 nm;~~ said bandgap corresponding to the energy of 365 nm light;

providing, with said electrical control circuitry, voltage or current to said at least one modulator individually, said voltage or current inducing said nano-particles to change transparency at 365 nm, said nano-particles thereby providing optical modulation at 365 nm;

illuminating said programmable mask with 365nm light to provide a spatial light pattern.